Nebraska Network Final Report and Recommendations

Presentation to the Commissioners of the Nebraska Information Technology Commission

Monday, September 16, 2002

NITC Meeting

Lincoln, Nebraska

NITC Resolution (10/31/2001)

- The NITC directs the chairs of the Education Council, State Government Council, and Technical Panel to explore the concept of a Nebraska Education Network and recommend by January 2002 a method for evaluating the feasibility of such a network. The report to the NITC shall be in the form of a charter that includes:

Nebraska Network Work Group Charter Components (Approved by NITC 2/21/02)

- Draft goals and objectives of a shared network;
- Basic requirements of such a network;
- Critical success factors and other issues that should be addressed;
- Description of the potential relationship of the network to NETCOM;
- Potential participants and other stakeholders;
- Scope, outcomes and timeline for the evaluation.

3 Phases of Study

1. Review of Nebraska's Networks (Interim Report)
   - State Agency Networks
   - Education Networks
2. Review of 9 peer states' Networks (Interim Report)
   - Colorado, Iowa, Indiana, Kansas, Missouri, North Dakota, Oklahoma, South Dakota, Wyoming
3. Final Report & Recommendations
   - Recommendations, Fiscal Impact, Funding Model, Business Case, Risk Analysis

Interim Report (April 30, 2002)

- Summary of Existing Networks
- Strengths and Weaknesses of Existing Networks
- Summary of Objectives for a Nebraska Network
- Potential Participants and Stakeholders
- Evaluation of other States' Networks
- Preliminary Findings

Review of Nebraska's Networks

- Several state agencies operate over a dozen statewide networks with most circuits coming back to Lincoln
- K-12 and higher education entities operate almost 20 statewide or regional networks in Nebraska
- Twelve K-12 consortia connect over 250 high schools with high bandwidth, interactive video distance learning classrooms but the consortia are mostly not interconnected

Telecommunications Costs

- The Division of Communications reported an estimated $7.2 million per year on state agency data networks and an additional $130,000 for video conferencing
- K-12 reported an annual expenditure of $6.5 million on pre-discounted telecommunications costs
- The University of Nebraska budgets almost $8 million annually on voice, data and research networks
- An additional $1.8 million pays for NET 2 and NET 3 transponder space on the satellite.

Summary from Nebraska

Lack of coordination and strategic management of networks results in:

- Underutilization of networks;
- Less than optimum value from investments;
- Lack of interconnectivity and interoperability, especially among video networks;
- Lack of market power when negotiating for services;
- Problems staying current with technology.

Other States' Networks

- State Networks; of the 9 studied, 1 is owned by the state; 2 are managed by an outside provider; 3 are university 501c3's; and 3 are some state agency acting as prime contractor
- Funding is divided between those who recover all costs in service charges and/or fees and those who are full or partially funded through the legislature
- More networks seem to be moving to charges for services as networks grow and mature
- Most state networks have some type of advisory board

Summary of Other States

- No two states have implemented the same statewide network in exactly the same way
- Each has its own particular environment, strengths, and weaknesses
- Nebraska seems to have more high quality, interactive video occurring than any state except Iowa but has the least amount of interconnectivity between video systems

Business Case for a Nebraska Network

- Interoperability of systems providing video courses and conferencing;
- Increased collaboration among all K-20 educational entities;
- New educational opportunities;
- Competitiveness with surrounding states;
- Greater efficiency for participating entities;
- Better utilization of public investments.

Recommendations

Vision Statement

1. Government, educational institutions, public purpose entities, and the private sector should work together to insure that Nebraska has an efficient, reliable, and scalable telecommunications infrastructure, widespread communications networks and sufficient network support functions.

Recommendations

Statewide Purchasing and Bandwidth Aggregation

2. All public entities should aggregate their purchasing with a centralized purchasing entity.

3. The Division of Communications should be the central telecommunications purchasing entity.

Recommendations

Telecommunications Backbone Concept

4. The Network Architecture Work Group should design the technical requirements for a core routing network (backbone).
5. The Division of Communications will work with all qualified vendors to implement the core routing network.

Recommendations

Network Application Layers

6. Stakeholders should begin planning a shared statewide IP-centric Intranet for education and other interested entities
7. Allow other network application layers to co-exist on the same core routing network

Recommendations

Governance

8. The Technical Panel should take the lead on network policies, standards, and guidelines.
9. Under the auspices of the NITC, an interim work group composed of stakeholders should be formed to coordinate implementation of an IP-centric network.
10. The interim work group should research and recommend to the NITC a long-term management model
11. All entities should coordinate future network plans with the NITC Technical Panel

Recommendations

Possible Value-added Services

12. The Technical Panel should convene a work group to prepare a plan to implement a Nebraska Statewide Synchronous Video Network.
13. The Education Council should evaluate, recommend, and prioritize other value-added services to benefit K-20 education.

Next Steps

- The NITC will convene a work group composed of potential IP-centric, shared network stakeholders
- The Network Architecture Work Group develops design parameters for a core routing network in cooperation with key telecommunications providers
- The Division of Communications moves forward with an aggregated purchasing plan
- The Technical Panel video work group determines the best option for interconnection of synchronous video networks
- The stakeholder work group develops a long-term strategy for network management and support services

Scottsbluff Pilot Project

- Through the efforts of the University of Nebraska and the Division of Communications, negotiations have taken place with Qwest Communications and Sprint Local Service to acquire high speed (DS-3) service from Scottsbluff to Lincoln.
- Goals of the pilot were met:
  - The coalition between the State and the University held together
  - There was money saved through joint purchasing

Scottsbluff Pilot Project (benefits)

- Service improvement to State agencies
  - Moved from Frame Relay service to private line service
- Local access costs in Scottsbluff were reduced by approximately 19%
- Ability for fractional services above 56kps in Scottsbluff
- Excess capacity for growth of 5 T-1's
- The increased performance of the existing service without an increase in price to state agencies minimally represents a 10 to 15% cost savings

Related Aggregation Efforts (NETCOM)

- Nebraska Educational Telecommunications is ordering terrestrial circuits through the Division of Communications
- The County automation network is combining circuits to county courthouses. Costs are now shared by DMV, Courts, HHSS, Secretary of State in all 93 counties. Two other agencies are sharing costs in selected counties, and others are under consideration.